ELECTRODE MATERIAL AND METHOD FOR MANUFACTURE THEREOF

ABSTRACT OF THE DISCLOSURE

An copper alloy material having a structure in which fine particles with a mean particle size of 50 nm or less have precipitated in a structure composed of fibrous crystal grains with a minor axis length of 10 μm or less which are composed of subgrains with a mean grain size of 3 μm or less is obtained by extruding an alloy material represented by a general formula $Cu_{bal.}X_a$ (wherein X is at least one element selected from the group consisting of Cr, Zr, Fe, P, and Ag; a is 1.5% by weight or less, and the balance is Cu comprising unavoidable impurities) at an extrusion ratio of 4 or higher and at a temperature of 300 to 600°C. The copper alloy material is preferably heat treated at a temperature of 350 to 700°C before and after the extrusion. The thus obtained alloy material is useful as an electrode material for welding because of improved mechanical properties, heat resistance, and high-temperature yield stress and exhibits a superior continuous welding ability (electrode life) as an electrode material.